

STANDARD SIZED ELEVATORS

ELEVATOR STANDARDS DATA

LAYOUT AND SPECIFICATIONS

THE WARNER ELEVATOR MFG. CO.
1917 BLDG.
CINCINNATI

STANDARD SIZED ELEVATORS

WHAT THEY ARE...
HOW ESTABLISHED
ADVANTAGES

MR. ARCHITECT—

In the last decade, much technical progress has been made in the development of electric elevators. This has resulted in higher speeds, smoother operation, greater safety and highly perfected automatic performance. These improvements have now made possible standardization of both freight and passenger elevators, resulting in many advantages to the architect, engineer and owner.

●Prior to this standardization, elevators were a tailor-made affair, with the resulting inevitably high costs. If it could honestly be said that the tailor-made elevator was the best elevator from the buyer's point of view, notwithstanding the cost, there would be no reason for standards—but exactly the reverse is true. Standardization has improved elevator engineering, design and workmanship, and at the same time lowered costs.

●Standard sizes refer to certain hatchway dimensions that should be incorporated in building plans to provide for elevator platforms approved and adopted by the Industry as standard size platforms.

●The standard sizes were established after extensive research and study by the Standards Committee of the National Elevator Manufacturing Industry, Inc., an association representing over ninety per cent of the manufacturers.

●The advantages of selecting and specifying standard sized elevators are many:

- (a) The plans will include space requirements approved by the Industry as those most efficient and economical.
- (b) Standards permit the best elevator engineering.
- (c) Lower costs will result.
- (d) More prompt execution of contracts by the elimination of special requirements.

●In the following pages will be found detailed information of two typical standard size elevators. There are many other standard sizes for varying requirements. We shall be pleased to furnish information covering the nearest standard size elevator for specific requirements if the architect or engineer will write advising the kind of building under consideration, type of occupancy, approximate population, and the number of floors to be served.

THE WARNER ELEVATOR MANUFACTURING CO.
Alfred and Valley Streets Cincinnati, Ohio

Branch Offices and Service Stations

CLEVELAND, OHIO
DAYTON, OHIO
PORTSMOUTH, OHIO
MUNCIE, IND.
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LEXINGTON, KY.
ATLANTA, GA.
MACON, GA.
JOHNSTOWN, PA.
PITTSBURGH, PA.

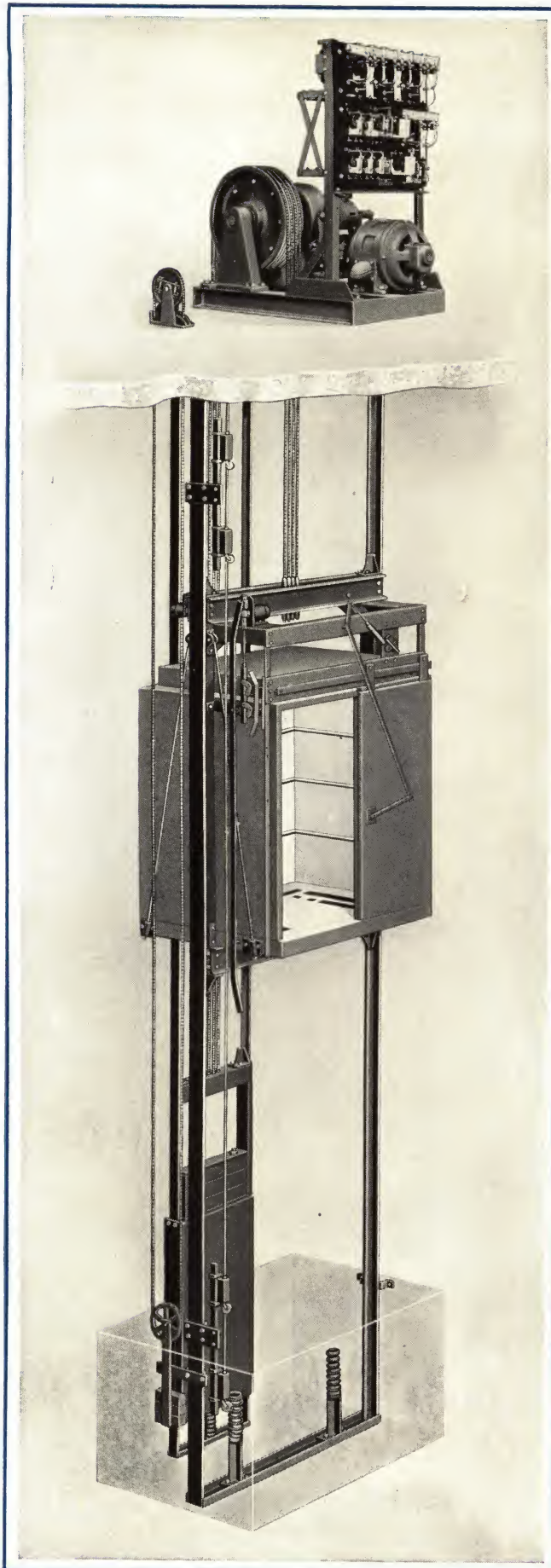
SERVICE STATIONS IN PRINCIPAL CITIES

A STANDARD SIZE PASSENGER ELEVATOR

The following described passenger elevator is based on a standard size platform adopted by the National Elevator Mfg. Industry, Inc. The elevator is recommended for speeds of 75 to 125 feet per minute, for intermittent service in buildings where the traffic is light, although the platform area permits of carrying nine or ten persons when the occasion demands. Such an arrangement is suitable for the average small apartment house, an institutional or administration building, or for some retail stores.

One of the advantages of a platform of comparatively greater width than depth is that a single sliding door may be used on the car in place of the collapsing gate, and either a single slide or single swing door for the shaftway enclosures. Such doors are easier to operate and more economical. On push button operated elevators it is advisable to use either an automatic release closer as described on the following specifications, or an electric opening and closing device on the car door, in which case the single sliding door affords more positive action and hence less cause of complaint due to uncompleted interlock circuits.

Another advantage of this standard size hatchway is that it will permit a well-engineered elevator layout as shown on the accompanying drawings. All of the overhead machinery may be placed in a penthouse area of the same dimensions as the shaftway, thus the shaft walls may be extended straight up above the roof without any further penthouse supports being required. Also, the elevator engine may be so located that its cables lift direct from the elevator car and counterweight. Architects incorporating this standard size hatchway in their building drawings will be assured of the obvious benefits derived from standardization. For the convenience of architects and engineers desiring to specify this standard size elevator, there follows on page 6 a set of Master specifications on which competitive bids can be obtained from any recognized manufacturer.



Layout for Standard Size Passenger Elevator

STANDARD PASSENGER ELEVATOR SHAFTWAY PLAN WITH HORIZONTAL SLIDING SHAFTWAY DOOR

COUNTERWEIGHT

LIGHT OUTLET
5'-0" ABOVE ϕ
OF TRAVEL BY
OWNER

CONTROL CABLE
JUNCTION BOX

CWT. GUARD

ϕ GUIDES

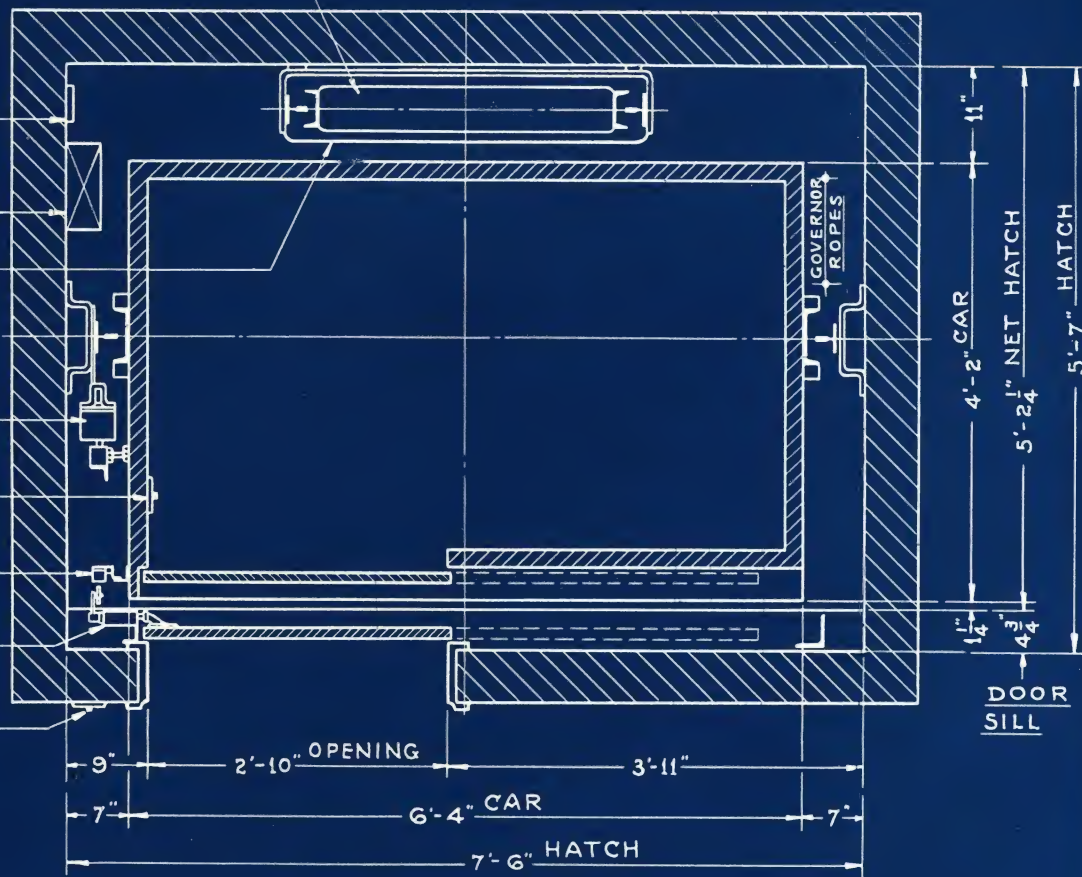
LIMIT SWITCHES

PUSH BUTTON

RETIRING CAM

INTERLOCK

PUSH BUTTON



DOOR DETAILS

1/2 x 6 x 6" REINF.
SHAFT SIDE

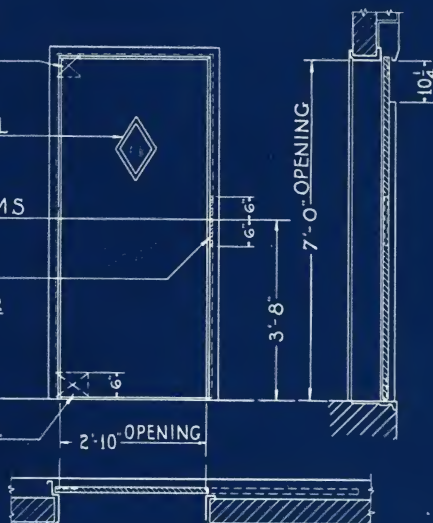
VISION PANEL

ϕ CLOSER ARMS

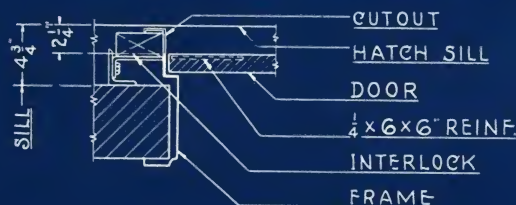
1/2 x 12" REINF.
EDGE OF DOOR

FIN. FLOOR

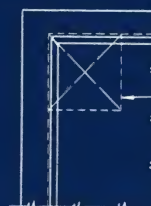
1/2 x 6 x 8" REINF.
SHAFT SIDE



CUTOUT IN DOOR FRAME FOR INTERLOCK

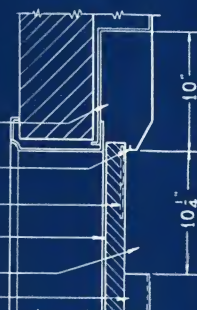


REINFORCEMENT IN DOOR FOR INTERLOCK

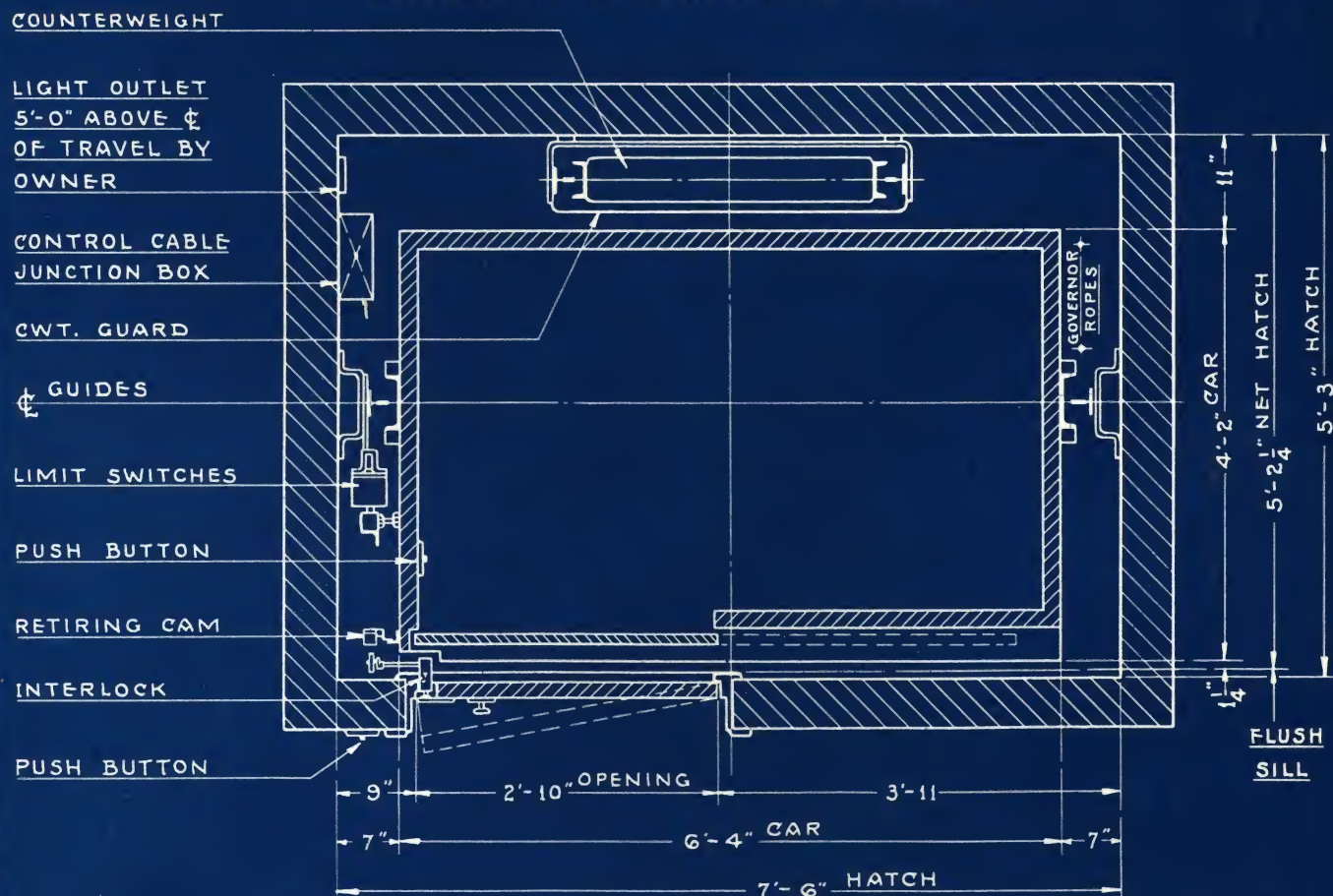


HANGER SPACE
FACIA
1/2 x 6 x 6" REINF.
DOOR
CUTOUT
DOOR FRAME

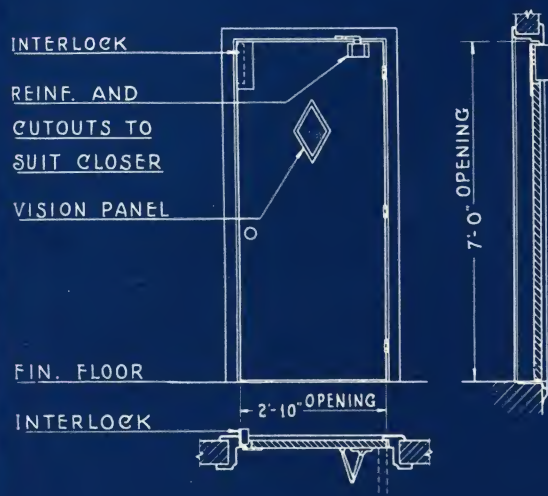
VERTICAL
SECTION



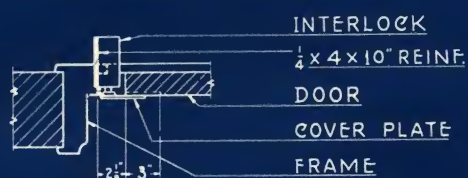
STANDARD PASSENGER ELEVATOR SHAFTWAY PLAN WITH SWING TYPE SHAFTWAY DOORS



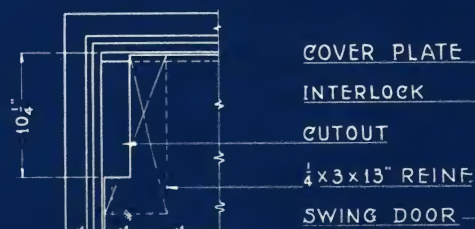
DOOR DETAILS



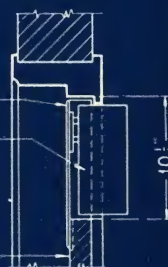
REINFORCEMENT IN DOOR FRAME FOR INTERLOCK



CUTOUT IN DOOR FOR INTERLOCK



VERTICAL SECTION



MASTER SPECIFICATIONS FOR STANDARD SIZE PASSENGER ELEVATOR

GENERAL:

It is the intent of this specification to cover the furnishing and installing of elevator equipment as hereinafter specified and as shown on the accompanying drawings, in a first-class and workmanlike manner. The installation shall be in accordance with the American Standards Safety Code for Elevators, or any local codes which may govern the requirements of the installation, and shall also conform to the requirements of the National Board of Fire Underwriters and The National Electrical Code.

DRAWINGS:

Before beginning work, the elevator contractor shall prepare all drawings necessary to show the general arrangement of the elevator equipment. These drawings must be properly approved by owner before commencing fabrication of the elevators.

PERMITS AND INSPECTION:

The elevator contractor shall obtain and pay for the necessary permit and inspection as required by local regulations, also make such tests as called for by such authorities.

CAPACITY AND SPEED:

The elevator is to lift a load of 1500 lbs. in addition to the weight of the car, and with 1500 lbs. is to travel at a speed of 100 feet per minute with a constant potential at the motor of 220 volts, 3 phase, 60 cycles, alternating current. (Substitute for any change in available current supply.)

TRAVEL:

The car is to travel from.....to.....floor, about.....feet, stopping at.....floors and serving.....openings.

DIMENSIONS:

Size of car is to be 6'4" by 4'2" outside dimensions of the platform.

OPERATION AND CONTROL:

The elevator shall be operated by Automatic Push Button (single call type) Control consisting of a panel of sending buttons in the car, numbered to correspond with the floors to be served, and a single push button panel with "In Use" light signal at each floor landing. Momentary pressure from either car or floor button, provided the doors are closed and the elevator is not already in use, shall start the car to that floor. An emergency stop button shall be provided in the car to stop the car at any point in the shaft. The controlling device shall be so arranged to give the person in the car complete and uninterrupted use of the elevator until the car has reached the desired floor and the car door had been opened and closed. A hall time relay shall be provided, designed to render the car inoperative from the hall buttons for a predetermined period of time after the car has stopped to give waiting passenger time to open the door and enter car.

CAR:

The car shall be constructed of not less than No. 14 gauge polished furniture steel, of modern design, and provided with a 5 coat baked enamel finish of color as selected, including a different color canopy. All car fixtures and trim shall be furnished in a similar metal finish as selected. The car paneling shall be reinforced with vertical stiffening angles on not more than 12" centers, a separate base or kick plate being furnished below the paneling. The car shall be provided with a top exit, proper ventilators, flush type light fixture, and the platform shall be covered with rubber tile flooring of design selected.

CAR DOOR AND AUTOMATIC CLOSING DEVICE:

The car door shall be of the horizontal sliding type, finished to match the car, constructed of metal clad laminated wood with reinforcements for hangers, floor guides, closer arms and other hardware, and provided with sheave type hangers. The door shall be equipped with an automatic electric closing device which will cause the door to close automatically upon the pressure of any car or hall button providing the enclosure doors are closed and locked.

INTERLOCKS:

Car door contacts shall be furnished and installed so the car cannot move until the car door is closed. Automatic door locks and contacts shall be furnished and applied to all the enclosure doors by this contractor, so that the car cannot move until all enclosure doors are closed and locked.

PLATFORM:

The platform to be steel framed and fireproofed on underside. The floor shall consist of 7/8" matched wood on 2" yellow pine sleepers laid over a heavy underfloor.

CAR SUPPORTING FRAME:

The car supporting frame shall be made of structural steel, arc welded and bolted together, of sufficient strength to meet the requirements of the A. S. S. Code, rule 210-B. It shall be provided with adjustable, swiveling guide shoes and adjustable spring cushioned cable hitch to give uniform tension to the cables and reduce the strain of acceleration. It shall have mounted under platform, a safety device which is self-setting when tripped by the governor.

ADJUSTABLE STAY RODS:

Adjustable stay rods shall be provided at the corners of the platform.

GOVERNOR:

An overhead governor with 1/2" flexible steel operating cable shall be provided and set to trip the safety when the car descends at 40% overspeed. The governor shall also be provided with a contact to open the control circuit and stop the motor when or before the safety operates.

MACHINE LOCATION:

The elevator machine shall be located over the hatchway on suitable steel beams furnished in place by the elevator contractor.

MACHINE:

The machine shall be of the single wrap traction worm geared type with motor, brake, gearing and driving sheave mounted on a welded structural steel bed plate of ample stiffness to prevent misalignment in service.

SOUND REDUCING:

Necessary rubber cushioning blocks, properly enclosed with steel caps, shall be provided under the elevator machine to effectively isolate the machine from the building.

WORM GEAR:

The worm gear and traction sheave shall be mounted with approved Timken Roller Bearings on a fixed axle. The two Timken bearings shall both be mounted in the hub of the spider avoiding the possibility of misalignment. The gear shall consist of a bronze ring flange bolted to a heavy cast iron

spider for easy renewal. The worm shall be a steel forging integral with its shaft and accurately finished. Both worm shaft and traction sheave axle shall be provided with leather cup seals to retain lubrication and keep dust from the bearings.

TRACTION SHEAVE:

The traction sheave shall be of tough cast steel to support high grade steel lifting cables without undue wear of the sheave. It shall have undercut grooves to maintain the 30 degree wedging action throughout the life of the sheave. It shall be demountable for easy renewal.

BRAKE:

The brake shall be spring applied, electrically released, so designed that it will be applied in the event of failure of power supply from any cause. It shall be of the D. C. magnet type.

MOTOR:

The motor shall be of the induction type especially designed for this service. It shall give high starting torque and uniform speed with economy. The motor shaft to be heavy to maintain the close clearance demanded by economy and good regulation. The bearings shall be of the renewable, ring-oiling type, of phosphor bronze.

CONTROLLER:

The controller shall consist of magnet switches mounted on heavy ebony asbestos panels to govern all the functions of starting, stopping, and reversing the elevator motor in response to control push buttons or automatic stops. These contactors shall be quiet and cool in operation, free from arching, sturdy and dependable. Automatic devices shall be provided to prevent damage to motor by overload or excess current. Controller frame shall be built up of angles mounted over the motor on the steel bed plate of the engine.

RECTIFIERS:

Dry type rectifiers shall be furnished to provide direct current for the operation of brake and controller magnets.

SAFETY SWITCHES:

A dependable phase reversal relay shall be provided to open control circuit in case of phase reversal. Thermal cutoff shall be provided to open the control in case of the stalling of the motor by failure of one phase. The failure of the supplied current or the opening of any door or other safety switch shall in any case open the control contactors disconnecting motor and brake, stopping the car.

NON-INTERFERENCE:

The controller includes a non-interference system whereby all other buttons are inoperative while one is in use.

CAR HOLDING FEATURE:

When the car is operated from the elevator platform, the control shall be so arranged that after a stop, the elevator cannot be started from the hallway until the hatchway door has been opened and closed.

GUIDES:

Finished steel tee guides shall be furnished for the car and counterweight.

GUIDE LUBRICATORS:

Wick and Wipe type guide lubricators shall be furnished and mounted on the car and counterweight.

ROPES:

The elevator shall be provided with four 1/2" flexible steel cables of 8-19 Seale Patent Construction.

COUNTERBALANCE:

The counterbalance shall be mounted in a structural steel frame and all filling blocks secured by two through-bolts clamping them in place. The counterbalance shall be provided with four adjustable slides. A counterbalance guard shall be provided in the pit.

TERMINAL BUFFERS:

Helical spring buffers shall be provided as a means of bringing the car and counterweight to a gradual and positive stop at the extreme limits of travel should the car for any reason run by the final limit switches.

WORK NOT INCLUDED:

- (a) Preparation of legal hoistway properly framed and enclosed, suitable pit of proper depth with drains and waterproofing if necessary. Machine room and penthouse properly lighted and ventilated, including suitable penthouse floor, adequate access doors, ladders and guards, as required.
- (b) Proper electric feed wires with required main line switches, circuit breakers or fuses. These feeders will be brought to the terminals of the elevator control panel, also furnish necessary hoistway outlets for car lights, and machine room outlet for elevator signal equipment. The required electric power will be furnished for necessary testing and adjusting of the elevator and signal equipment.
- (c) Furnish in place all hoistway entrances, including sills and frames.
- (d) All cutting and patching of beams, walls and masonry work required, including repairs to plaster, also all chases and openings as required by the elevator contractor and shown on these drawings.

GUARANTEE:

The elevator contractor shall guarantee that the materials and workmanship of the apparatus installed by him under these specifications, shall be first class in every respect, and that he will make good any defects not due to ordinary wear and tear or improper use, which may develop within one year from date of completion of the equipment.

HATCHWAY DOORS (Optional)

HORIZONTAL SLIDING DOORS:

Furnish and install a total of.....sets hollow metal hatchway entrances complete, including horizontal single sliding flush type doors for clear openings approximately.....feet wide by.....feet high, and bucks, frames, trim, sills, hangers, hanger covers and hardware, including oil cushioned automatic closers. Doors shall be constructed of polished furniture steel, finish to be selected, and provided with vision panel.

SWING TYPE DOORS:

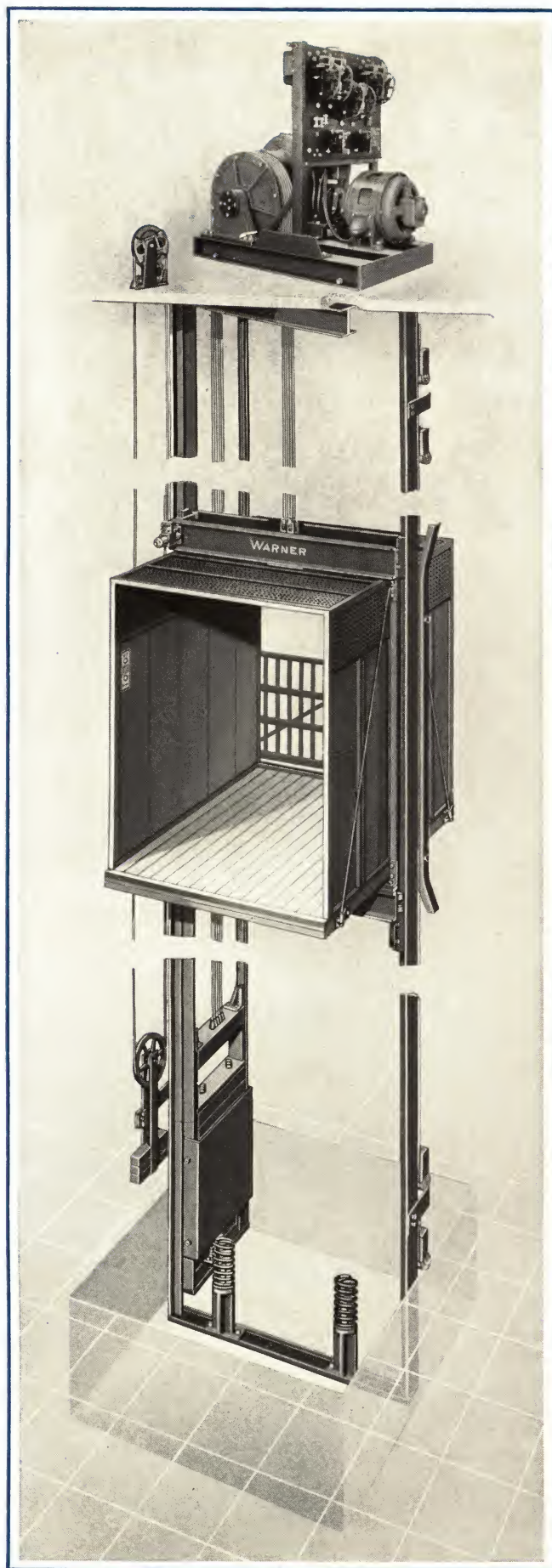
Furnish and install a total of.....sets of hollow metal hatchway entrances complete, including single swing flush type door for clear openings approximately.....feet wide by.....feet high, and bucks, frames, trim, sills, and hardware including oil cushioned automatic closers. Doors shall be constructed of polished furniture steel, finish to be selected, and provided with vision panel.

A STANDARD SIZE FREIGHT ELEVATOR

The following described freight elevator is based on a standard size platform adopted by the National Elevator Mfg. Industry, Inc. The elevator is recommended for moderate capacity, slow speed freight elevator work. A duty of 2500 pounds at 50 feet per minute is usually applicable for such requirements. This type of elevator is used extensively in many manufacturing enterprises, warehouses, wholesale and retail stores, in fact for any freight job obviously requiring more time to load and unload the platform than could possibly be gained through any increase in the car speed.

The platform size was established after extensive research and analysis of existing freight elevator installations. The study revealed that a remarkable number of elevators of this class had similar platform area requirements. Under the conditions it seemed reasonable that the buyer should be afforded the benefits accruing to the purchaser of a standard size truck body, for example, as compared with one custom-built. The greatest variable was the question of loading from one end as against both ends, or from opposite ends at different floors. The layout on the following page provides for optional requirements in this respect as well as the option of using bi-parting fireproof hatchway doors required by many building codes as against hatchway gates.

The architect will benefit by choosing a standard elevator, because he will have much necessary information at hand and can specify an elevator of the correct size and type with a minimum of office work. Also probability of complaints after the job is completed are reduced, because the standard elevator has been selected only after a careful study of the best features of thousands of existing elevators.



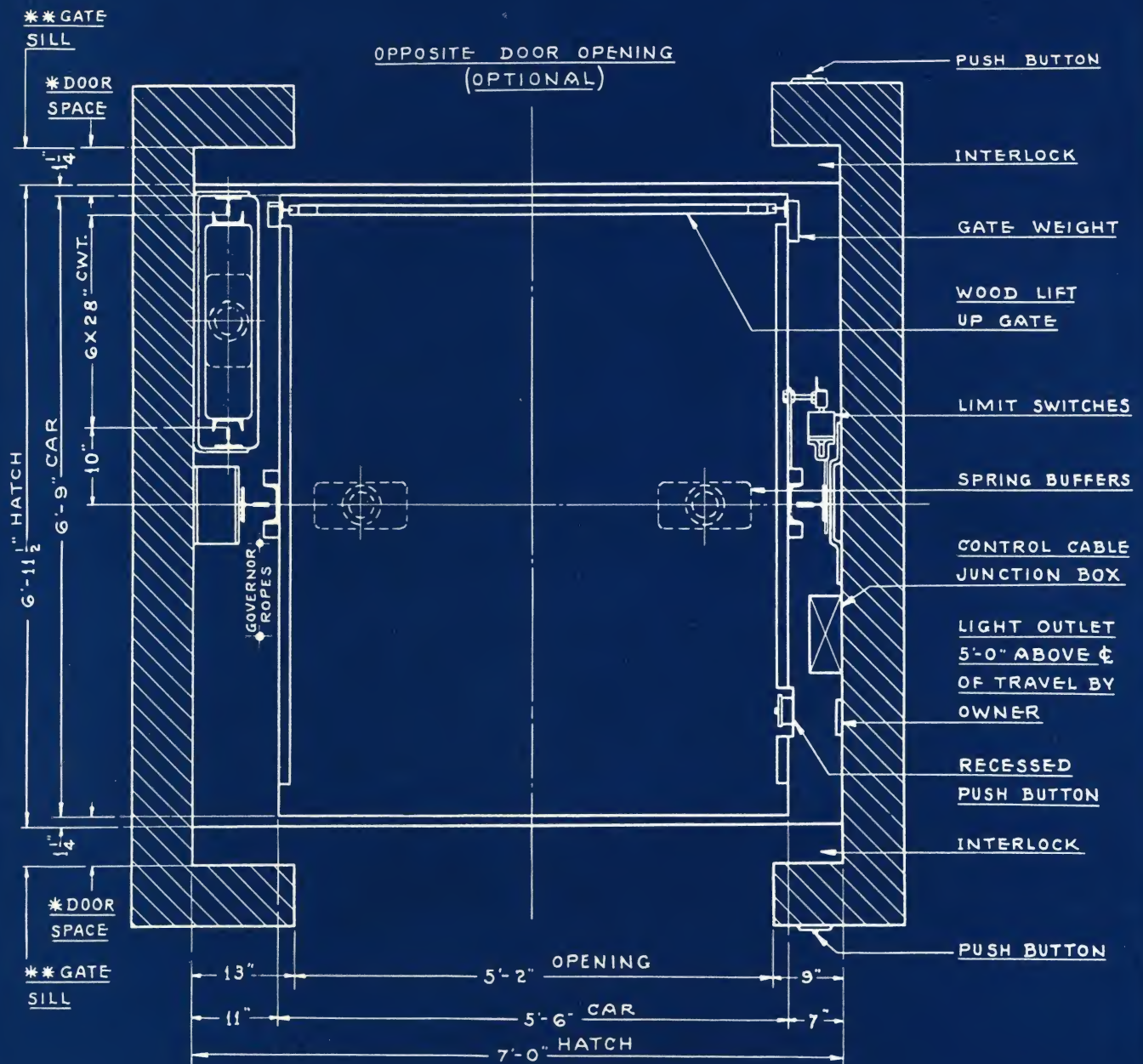
Layout for Standard Size Freight Elevator

THE WARNER ELEVATOR MFG. CO.

EST. 1860

CINCINNATI

STANDARD FREIGHT ELEVATOR PLAN (Shaft)



* DOOR OPENINGS TO FREIGHT ELEVATORS ARE USUALLY 7'-6" HIGH. THE SPACE REQUIRED FOR VERTICAL SLIDING FIREPROOF DOORS FROM THE CAR TO THE WALL IS 4 3/4" FOR FLOOR HEIGHTS 11'-9" OR MORE, AND 6 1/2" FOR FLOORS LESS THAN 11'-9".

** THE SPACE REQUIRED FOR SLAT TYPE GATES OR HORIZONTAL SLIDING DOORS IS 6 1/4" ALLOWING 5" FOR A SILL INSIDE THE ENCLOSURE WALL.

MASTER SPECIFICATIONS FOR STANDARD SIZE FREIGHT ELEVATOR

GENERAL:

It is the intent of this specification to cover the furnishing and installing of elevator equipment as hereinafter specified and as shown on the accompanying drawings, in a first-class and workmanlike manner. The installation shall be in accordance with the American Standards Safety Code for Elevators, or any local codes which may govern the requirements of the installation, and shall also conform to the requirements of the National Board of Fire Underwriters and The National Electrical Code.

DRAWINGS:

Before beginning work, the elevator contractor shall prepare all drawings necessary to show the general arrangement of the elevator equipment. These drawings must be properly approved before the installation of the elevators.

DIMENSIONS:

Size of the car is to be 5'6" x 6'9" outside dimensions of the platform.

TRAVEL:

The car is to travel from to floor, about feet, stopping at floors and serving openings.

OPERATING DEVICE:

The operating device shall consist of a panel of "Up" and "Down" push buttons in the car and at each floor landing.

LOAD AND SPEED:

The elevator is to lift a load of 2500 lbs. in addition to the weight of the car, and with 2500 lbs. is to travel at a speed of 50 feet per minute with a constant potential at the motor of 220 volts, 3 phase, 60 cycles, alternating current. (Substitute for any change in available current supply.)

CAR:

The car shall be wainscoted 6'0" high with not less than No. 14 gauge sheet steel neatly paneled and stiffened with vertical angles on 10" centers. The top of the car and the sides above the wainscoting shall be enclosed with No. 7 wire screen or perforated metal.

CAR GATE:

If there are two entrances to the car, the one farthest from the operator shall be protected by a manually operated counter-balanced vertical rising wood gate. The gate shall be equipped with an electric contact connected in the operating circuit to prevent the movement of the car while the gate is open.

PLATFORM:

The platform shall consist of a steel frame with plank under-flooring and either maple or beech top floor.

CAR SAFETY FRAME:

The car supporting frame shall be made of structural steel, arc welded and bolted together of sufficient strength to meet the requirements of the American Standards Safety Code. It shall be provided with adjustable guide shoes. It shall have mounted under the platform a safety device which is self-setting when tripped by the governor. The safety device shall be arranged to bring the descending car to a stop on the guide rails, and provision made to shut off the power supply to the elevator motor.

GOVERNOR:

An overhead governor with 1/2" flexible steel operating cable shall be provided to trip the safety and clamp the car to the guide rails in case of excessive descending speed. Both the governor and its tension sheave shall have Timken roller bearings to insure permanency and quietness. All pivots not in continuous motion shall be of brass to avoid corrosion.

TRACTION SHEAVE:

The traction sheave shall be of tough cast steel to support high grade steel cables without undue wear of the sheave. Both the traction sheave bearings shall be mounted in the hub of the spider on a fixed assembly which insures the permanent alignment of the bearings.

BRAKE:

The brake shall be of the three-phase magnet opened type with leather lined shoes applied by a powerful helical spring to the coupling pulley of the worm shaft.

MOTOR:

The motor shall be of the induction type especially designed for elevator service. It shall give high starting torque and uniform speed with economy. The motor shaft shall be heavy to maintain the close clearance demanded by economy and good regulation. The bearings shall be of the renewable, ring-oiling type, of phosphor bronze.

BED PLATE:

The base shall be built up of structural steel members, arc welded together to give the utmost stiffness and avoid misalignment either from settlement or tightening of anchor bolts.

GUIDES:

Finished steel guides not less than 14 lbs. per foot shall be furnished for the car and similar guides not less than 7 lbs. for the counterweight.

GUIDE LUBRICATORS:

Wick and Wipe type guide lubricators shall be furnished and mounted on car and counterweight.

ROPES:

The elevator shall be provided with five 1/2" flexible steel cables of 8-19 Seale Patent Construction.

COUNTERBALANCE:

The counterbalance shall be mounted in a structural steel frame and all filling blocks secured by two (2) through-bolts clamping them in place. The counterbalance shall be provided with four adjustable slides.

TERMINAL AND FINAL LIMITS:

The car will be stopped automatically at the terminal floors. Should the car travel beyond the terminal floors, the final limit switches will automatically prevent the car from proceeding beyond its normal limits of overtravel.

TERMINAL BUFFERS:

Helical spring buffers shall be provided as a means of bringing the car and counterweight to a gradual and positive stop at the extreme limits of travel, should the car for any reason run by the final limit switches.

OPERATION:

Continuous pressure on the "Up" or "Down" dispatching buttons in the car or at the floor landing, unless the car is already in motion or an enclosure door or gate is open, shall cause the car to travel in the desired direction until the button is released. An emergency switch shall be provided in the car to interrupt the power supply, thus applying the brake and stopping the car, independently of the regular operating device.

OPEN DOOR SIGNAL:

A bell shall be provided in the car and so connected that it will ring when pushing any of the control buttons, if an enclosure door or gate has been left open.

EMERGENCY CALL BELL:

Button marked "emergency" shall be mounted in the car to be connected to a call bell in shaft.

CONTROLLER:

The controller shall consist of magnet switches mounted on ebony asbestos panels to govern all the functions of starting, stopping and reversing the elevator motor in response to control push buttons or automatic stops. These contactors shall be quiet and cool in operation, free from arcing, sturdy and dependable. Automatic devices shall be provided to prevent damage to motor by overload or excess current. (Controller frame shall be built up of angles mounted over the motor on the steel bed plate of the engine.)

SAFETY SWITCHES:

A dependable phase reversal relay shall be provided to open control circuit in case of phase reversal. Thermal cutoff shall be provided to open the control in case of the stalling of the motor by failure of one phase. The failure of the supplied current or the opening of any door or other safety switch shall in any case open the control contactors disconnecting motor and brake, stopping the car.

NON-INTERFERENCE:

The controller includes a non-interference system whereby all other buttons are inoperative while one is in use.

CAR HOLDING FEATURE:

When the car is operated from the elevator platform the control shall be so arranged that after a stop, the elevator cannot be started from the hallway until the hatchway door has been opened and closed.

MACHINE LOCATION:

The elevator machine shall be located over the hatchway on suitable steel beams furnished in place by the elevator contractor.

MACHINE:

The machine shall be of the single worm geared traction type with motor, brake, gearing and driving sheave mounted in proper alignment on a structural steel bed plate.

WORM GEAR:

The worm gear shall be of bronze accurately cut from a ring which is flange bolted to a heavy cast iron spider. The worm shall be cut from a solid steel forging integral with the worm shaft. The thrust shall be carried on ball bearings easily accessible for repair or renewal. This equipment shall have a second reduction by means of an internal gear and pinion driven by the worm gear shaft. The worm gear shaft and the internal gear, which also carries the traction sheave, will be mounted on TIMKEN bearings with suitable grease seals and provisions for alemite lubrication.

HATCHWAY GATES:

Furnish and install a total of oak counterbalanced lift up gates complete with columns, hardware, pulleys, counterbalance, rope, and electro mechanical interlocks to prevent operation of the elevator until the gates are closed and prevent the opening of any gate until the car is at that landing. The gates are to conform to the American Safety Standards Code or local regulations.

WORK NOT INCLUDED:

- (a) Preparation of legal hoistway properly framed and enclosed, suitable pit of proper depth with drains and waterproofing if necessary. Machine room and penthouse properly lighted and ventilated, including suitable penthouse floor, adequate access doors, ladders and guards, as required.
- (b) Proper electric feed wires with required main line switches, circuit breakers or fuses. These feeders will be brought to the terminals of the elevator control panel, also furnish necessary hoistway outlets for car lights, and machine room outlet for elevator signal equipment. The required electric power will be furnished for necessary testing and adjusting of the elevator and signal equipment.
- (c) Furnish in place all hoistway entrances, including sills and frames.
- (d) All cutting and patching of beams, walls and masonry work required, including repairs to plaster, also all chases and openings as required by the elevator contractor and shown on these drawings.

OPTIONAL

HATCHWAY DOORS:

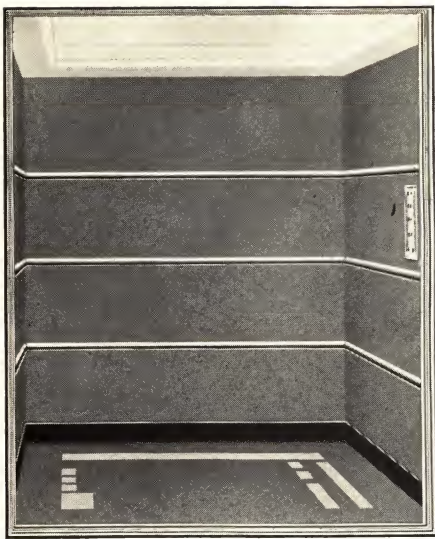
Furnish and install a total of manually operated counter-balanced bi-parting hoistway doors of or equal manufacture, equipped with electro-mechanical interlocks and wired glass vision panel in the upper section. Doors shall be equipped with suitable hand latches operated from both car and floor for manual closing. The doors shall be given a prime coat of paint at the factory, and the final painting after erection will be done by the purchaser. Door sills and frames are to be installed by owner in accordance with elevator layout.

*Substitute in lieu of hatchway gates.

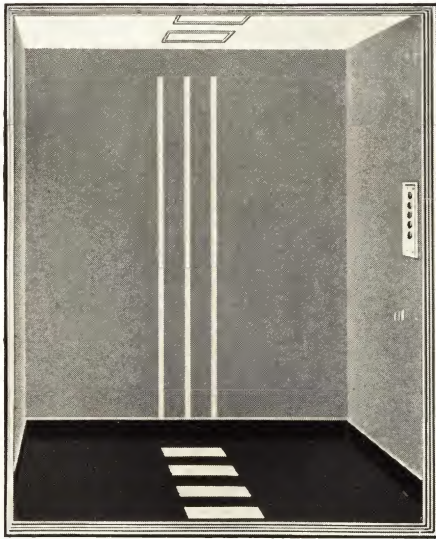
GUARANTEE:

The elevator contractor shall guarantee that the materials and workmanship the apparatus installed by him under these specifications, shall be first class in every respect, and that he will make good any defects not due to ordinary wear and tear or improper use, which may develop within one year from date of completion of the equipment.

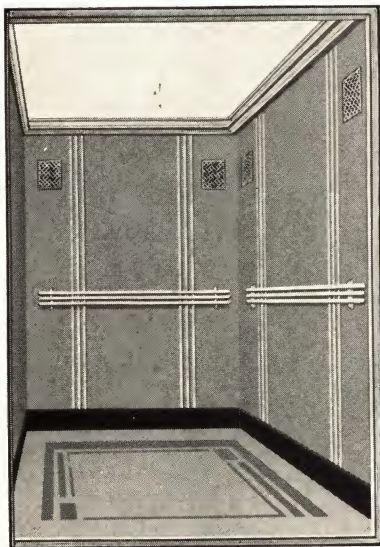
UNDIVIDED



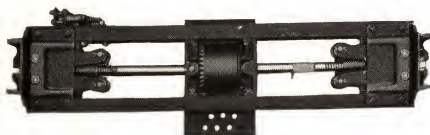
1. Warner Design WAJ
with Indirect Lumiline
Lighting



2. Warner Design WAK
with Flush Type
Lighting



3. Warner Design WAI
with Indirect Lumiline
Lighting



4. Warner Heavy Construction
Safety Device



5. Warner Approved
Type Oil Buffer



6. Warner Steel Driving Sheave with Its Timken
Bearing Shaft

The electric elevator today is the product of a successful combination of electrical and mechanical mechanisms requiring close synchronization. It is the combination of the motor, controller, brake, and other parts of the elevator that spell success or failure for the installation, and not the degree of excellence of the individual parts. Parts assembled from different manufacturers make it difficult not only to place responsibility for failure, but also to obtain prompt and proper replacements when trouble does occur. The Warner Elevator Mfg. Company manufactures the complete elevator, including the electrical units, such as both alternating and direct current motors, motor generators, controllers, interlocks, safety devices, as well as all other mechanical parts. No radical experiments have been sold—our customers have simplified equipment well made, which requires little attention or upkeep expense. We assume the undivided responsibility for the satisfactory operation of the complete elevator.

MACHINES

WARNER machines are of liberal proportions for duties required, manufactured on a precision tool basis, all parts being standard and interchangeable. Similarity of design and features of development are apparent throughout the entire WARNER line and gives it an indelible stamp of quality.

ELEVATOR CARS

WARNER elevator cars of our own manufacture are of the highest standard of quality in both design and workmanship. Limited space prevents the illustrating of more than a few suggestions. Numerous designs are available within different price ranges.

BUFFERS

Safety codes permit spring buffers on elevators running not over 200 feet per minute, but oil buffers are required for higher speeds. The WARNER oil buffer, illustrated below, has been tested and approved as meeting all requirements of the U. S. Bureau of Standards.

MOTORS—CONTROLLERS

WARNER motors and controllers are manufactured in our own shops. Through years of experiment and careful attention to details and operation, we have developed combinations that will withstand the heavy duties imposed upon them by elevator service. To attain the greatest degree of success in operation the controller must be designed and adjusted to work in conjunction with the motor.

RESPONSIBILITY

TIMKEN ROLLER BEARINGS

Plate (6) below illustrates standard bearing construction on WARNER geared elevators. The drum shaft is fixed, and the spider bearing the worm gear and driving sheave rotate on suitable approved Timken Roller Bearings. This eliminates most of the starting friction and wear that sooner or later calls for expensive repairs on other types of bearings.

MICRO ADJUSTMENT

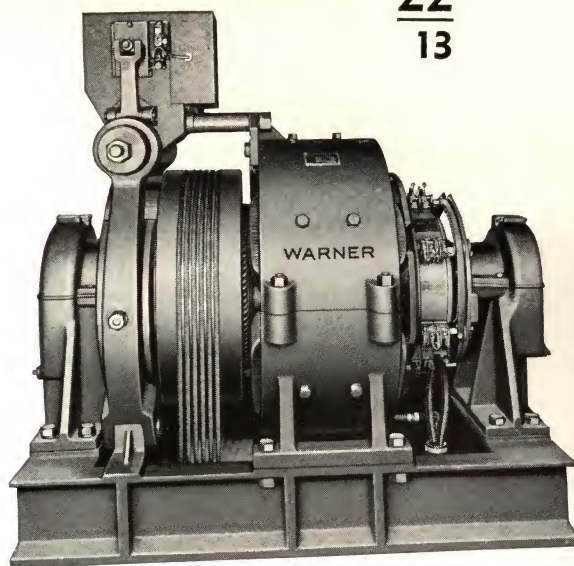
Another vulnerable point in elevator construction where wear is likely to occur is at gear centers. Through the use of an eccentric shaft (7) on each end of the fixed axle, the gears may be raised or lowered into closer mesh. This device permits both initial and later adjustments and adds years of service to the elevator.

STEEL BED PLATE

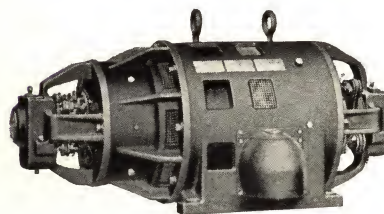
For greater strength and rigidity, WARNER uses deep steel ship channel sections, arc welded, with planed bearing pads for housing and motor. This bed plate maintains factory alignment of all parts so necessary for continued good service (7).

STEEL DRIVING SHEAVE

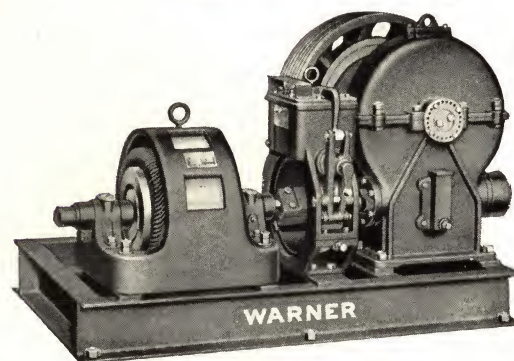
The driving sheave illustrated (6) carries the entire weight of car, load and counterbalance. WARNER uses the best steel casting or hammered steel forgings available for this sheave, instead of cast iron or semi-steel, as is sometimes used to save in cost. It has the hardness and toughness necessary to give traction and little wear with highest quality steel cables. It is also demountable for easy and less costly replacement should wear occur.



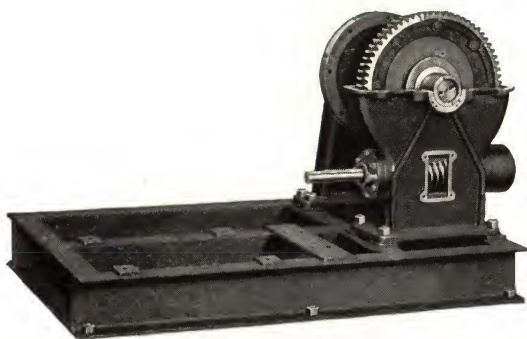
12. Warner High Speed Gearless Traction Engine



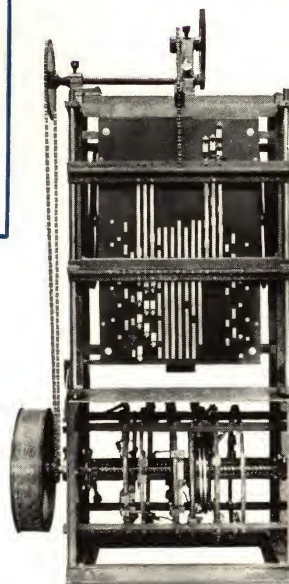
11. Warner Motor Generator Set



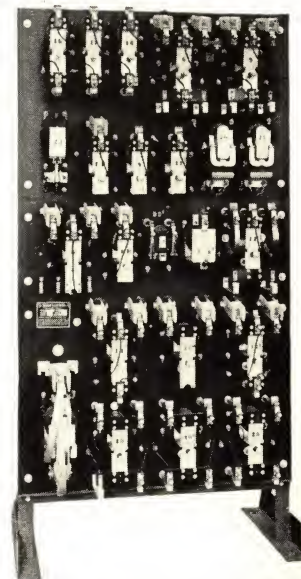
10. Warner Geared Traction Engine



7. Warner Micro Worm Gear Adjustment and Steel Bed Plate



8. Warner Automatic Push Button Selector for Collective Control



9. Warner Controller for Variable Voltage and Automatic Leveling

THE WARNER ELEVATOR MFG. CO.

THE COMPANY AND ITS FACILITIES

The WARNER ELEVATOR MFG. COMPANY was established in Cincinnati in 1860, at that time operating under the name of Warren Warner, the founder. Many give Warren Warner the credit of building the first hydraulic elevator; certainly the firm was one of the first to go into the business of building vertical lifts for the moving of passengers and freight from one floor to another. The company was incorporated under its present name in 1887 and has been engaged exclusively in elevator work since its origin. As a result of a good reputation and good management, the company has had a normal growth through the years; it enjoys the highest financial rating and is regarded one of the strongest of the independent manufacturers. Since it is not a result of combinations of other companies, but has continued under one management throughout its life, it is able to render prompt service from accurate records on all equipment bearing its name.

MANUFACTURING FACILITIES

The largest and most modernly equipped factory devoted exclusively to the manufacture of elevators west of New York, manufacturing elevator equipment on a modern precision tool basis. Expert individual attention by skilled workmen is given to each installation, and at the same time the production facilities are such that the benefits of quantity production may be obtained. All new devices are thoroughly tested in the Company's own 100-foot Test Tower.

Main Assembly Floor, The Warner Elevator Mfg. Co.



C I N C I N N A T I • O H I O